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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/047,509

10/23/2001

Tat N. Ho

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65 WOODS END ROAD
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EXAMINER

TRAN, DENISE

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 06/03/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

PR4

Office Action Summary

Application No.

10/047,509

Applicant(s)

HO ET AL.

Examiner

Denise Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/26/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-19 are presented for examination.
2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because the abstract exceed 150 words in length. Correction is required. See MPEP § 608.01(b).
4. Claims 2-9, 11-15, and 17-19 are objected to because of the following informalities: "A method" should be --The method--. Appropriate correction is required.
5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 8, 10-14, and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Schurecht et al., U.S. Patent No. 6,260,157 (hereinafter Schurecht).

As per claim 1, Schurecht shows a method of modifying program code stored in ROM, comprising:

a) preceding each potentially modifiable code segment in ROM with a call to a lookup function which is logically external to the ROM (e.g., fig. 2, el. 67, 65; fig. 4, els. 75, 65, 85; and abstract; col. 4, lines 43-67; col. 6, lines 45-55);

b) storing the look up function in a RAM (e.g., fig. 2, el. 65; fig. 4, els. 65, 85, 90; and abstract; and col. 4, lines 43-67);

c) storing replacement code segments in the RAM with addresses (e.g., col. 5, lines 25-40);

d) providing the lookup function with an address table whereby the lookup function determines whether or not each potentially modifiable code segment in ROM has a replacement code segment in RAM (e.g., fig. 2, el. 65; fig. 4, els. 65, 85 and col. 5, lines 1-10); and

e) executing the replacement code segment in RAM in place of potentially modifiable code segment in ROM whenever the lookup function determines that a potentially modifiable code segment in ROM has a replacement code segment in RAM (e.g., col. 5, lines 1-10; col. 5, lines 24-40; col. 6, lines 10-27; col. 10, lines 15-45).

As per claim 10, Schurecht shows an embedded system (e.g., fig. 1, el. 20), comprising:

- a) a processor (e.g., fig. 1, el. 30);
- b) a ROM coupled to said processor and containing program code for execution by said processor (e.g., figs. 1-2, el. 45);
- c) a RAM coupled to said processor and containing at least one replacement code segment for replacing a segment of said program code in ROM (e.g., fig. 2, el. 50; and col. 5, lines 1-10) and a lookup function (e.g., fig. 2, el. 65; fig. 4, els. 65, 85, 90 and col. 1, lines 1-10; col. 4, lines 60-67); wherein each potentially modifiable code segment in ROM is preceded with a call to said lookup function (e.g., fig. 2, el. 67, 65; fig. 4, els. 65, 85, 90 and abstract; col. 4, lines 43-67; col. 6, lines 45-55; col. 10, lines 20-45), said at least one replacement code segment has an address (e.g., col. 5, lines 25-40), said lookup function has an address table whereby the lookup function determines whether or not each potentially modifiable code segment in ROM has a replacement code segment in RAM (e.g., fig. 2, el. 65; fig. 4, els. 65, 85 and col. 5, lines 1-10; col. 10, lines 20-45), and said processor executes the replacement code segment in ROM whenever the lookup function determines that a potentially modifiable code segment in ROM has a replacement code segment in RAM (e.g., col. 5, lines 1-10; col. 5, lines 24-40; col. 6, lines 10-27; col. 10, lines 20-45).

As per claim 16, Schurecht shows a method of modifying program code stored in ROM, comprising:

- a) preceding each potentially modifiable code segment in ROM with a call to a function which is logically external to the ROM (e.g., fig. 2, el. 67, 65; and abstract; col. 4, lines 43-67; col. 6, lines 45-55);
- b) storing the function (s) in a RAM (e.g., fig. 2, el. 65; and abstract; and col. 4, lines 43-67);
- c) executing the function in RAM when called by the calls in ROM (e.g., col. 5, lines 27-31).

As per claims 2-4 and 11-13, Schurecht shows each call to the lookup function includes a return address corresponding to the code segment it precedes (e.g., col. 5, lines 1-10 and col. 30-35; col. 9, lines 40-60; col. 10, lines 1-15 and col. 20-45); returning to the return address when the lookup function determines that there is no replacement code segment in RAM corresponding to the return address (e.g., col. 10, lines 20-40); the return addresses are used to index the address table (e.g., col. 9, lines 45-55; col. 10, lines 20-40);

As per claims 5-6, 8 and 14, Schurecht shows each replacement code segment includes a ROM address to which program execution will return after executing the replacement code segment (e.g., col. 5, lines 30-40); said method operates independent of programming language inherently (e.g., col. 1, lines 10-20); the RAM is loaded by a bootstrap program inherently (e.g., col. 6, lines 30-35).

As per claims 17-19, Schurecht shows said functions are chosen from the group consisting of a dummy function which returns execution to ROM and a fragment of

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replacement code which is executed and returns to ROM at an address subsequent to the address of the call which called the function (e.g., col. 10, lines 20-50); the calls to function are evenly spaced throughout the code in ROM (e.g., col. 4, lines 45-55); and said step of storing functions in RAM is executed at run-time (e.g., col. 6, lines 33-35).

7. Claims 7, 9, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schurecht et al., U.S. Patent No. 6,260,157 (hereinafter Schurecht) as applied to claims 1, 10, and 16 above, and further in view of Applicant's Admitted prior Art, current specification pages 1-4 (hereinafter AAPA).

As per claims 7, 9, and 15, Schurecht shows ROM (e.g., fig. 1, el. 45); and the RAM loaded by a computer (e.g., col. 6, lines 30-40). Schurecht does not explicitly shows a computer peripheral and a modem. AAPA shows a computer peripheral and a modem (e.g., page 2, lines 2-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of AAPA to Schurecht's reference because it would allow to perform specialized functions, controlling the operation of the computer peripheral device.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Lillich (5790856) shows a lookup table stored in a RAM;
- b) McGrath et al. (6438664) shows microcode patching.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise Tran whose telephone number is (703) 305-9823. The examiner can normally be reached on Monday, Thursday and an alternated Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for central Official communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



D.T.
May 31, 2004